

WHAT IS CLAIMED IS:

1. A metallic mirror comprising a substrate made of aluminum or an aluminum alloy, and an intermediate layer formed of TiO_2 and a metallic reflective layer formed of Cu which are superposed on the substrate in order.
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2. The metallic mirror according to claim 1, which further comprises one or more protective layers provided on said metallic reflective layer.
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3. The metallic mirror according to claim 1, which has a surface reflectance of 95% or higher.
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4. The metallic mirror according to claim 1, which is a metallic rotary polygonal mirror.
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5. The metallic mirror according to claim 2, wherein said protective layer is an aluminum oxide layer.
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6. A metallic rotary polygonal mirror comprising; a metallic polygonal mirror substrate made of aluminum or an aluminum alloy;
- an intermediate layer of TiO_2 formed by vacuum deposition on the substrate;
- a metallic reflective layer of Cu formed by vacuum

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deposition on the intermediate layer; and
a protective layer including at least a layer of
 Al_2O_3 , formed by vacuum deposition on the metallic
reflective layer.

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7. The metallic rotary polygonal mirror according
to claim 6, wherein;

10 said intermediate layer has a layer thickness of
from 50 nm to 150 nm, and said metallic reflective
layer has a layer thickness of from 80 nm to 150 nm.

8. The metallic rotary polygonal mirror according
to claim 6, wherein;

15 said protective layer comprises a double layer
consisting of a first protective layer and a second
protective layer.

9. The metallic rotary polygonal mirror according
to claim 8, wherein;

20 said first protective layer is a layer of Al_2O_3 ,
and said second protective layer is a layer of SiO_2 .

10. The metallic rotary polygonal mirror
according to claim 9, wherein;

25 said first protective layer has a layer thickness
of from 150 nm to 200 nm, and said second protective
layer has a layer thickness of from 10 nm to 20 nm.

11. The metallic rotary polygonal mirror according to claim 6, wherein;

said protective layer comprises a triple layer consisting of a first protective layer, a second protective layer and a third protective layer.

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12. The metallic rotary polygonal mirror according to claim 11, wherein;

said first protective layer is a layer of Al_2O_3 , said second protective layer is a layer of TiO_2 , and said third protective layer is a layer of SiO_2 .

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13. The metallic rotary polygonal mirror according to claim 12, wherein;

said first protective layer has a layer thickness of from 150 nm to 200 nm, said second protective layer has a layer thickness of from 80 nm to 100 nm, and said third protective layer has a layer thickness of from 10 nm to 20 nm.

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14. The metallic rotary polygonal mirror according to claim 6, which has a surface reflectance of 95% or higher.

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15. A process for producing a metallic rotary polygonal mirror, comprising the steps of;

forming an intermediate layer of TiO_2 by vacuum

deposition on a metallic polygonal mirror substrate metal comprised of aluminum or an aluminum alloy;

forming a high-reflectance metallic reflective layer of Cu by vacuum deposition on the intermediate 5 layer; and

forming a protective layer including at least a layer of Al_2O_3 , by vacuum deposition on the metallic reflective layer.

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16. The process for producing a metallic rotary polygonal mirror according to claim 15, wherein;

during the formation of said intermediate layer of TiO_2 , O_2 gas is added under a pressure of from 6.65×10^{-3} Pa to 26.6×10^{-3} Pa.

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17. The process for producing a metallic rotary polygonal mirror according to claim 15, wherein;

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during the formation of said high-reflectance metallic reflective layer of Cu, the metallic reflective layer is formed after the inside of a vacuum deposition chamber reaches a degree of vacuum of 2.66×10^{-3} Pa or above subsequently to the formation of said intermediate layer of TiO_2 film.

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18. The process for producing a metallic rotary polygonal mirror according to claim 15, wherein;

in the formation of said protective layer

including at least a layer of Al_2O_3 , when the layer of Al_2O_3 is formed on said high-reflectance metallic thin film of Cu, the protective layer is formed without addition of any O_2 gas at the initial stage of film formation until the film comes to have a layer thickness of 15 to 30% of a stated layer thickness, and further thereon, after the film has been formed beyond 15 to 30% and until it comes to have the stated layer thickness, with addition of O_2 gas under a pressure of from 6.65×10^{-3} Pa to 26.6×10^{-3} Pa.

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19. The process for producing a metallic rotary polygonal mirror according to claim 15, wherein; said intermediate layer is formed in a layer thickness of from 50 nm to 150 nm, and said metallic reflective layer is formed in a layer thickness of from 80 nm to 150 nm.

20. The process for producing a metallic rotary polygonal mirror according to claim 15, wherein; said protective layer is formed in a double layer consisting of a first protective layer and a second protective layer.

25. The process for producing a metallic rotary polygonal mirror according to claim 20, wherein; said first protective layer is a layer of Al_2O_3 ,

and said second protective layer is a layer of SiO_2 .

22. The process for producing a metallic rotary polygonal mirror according to claim 21, wherein;

5 said first protective layer is formed in a layer thickness of from 150 nm to 200 nm, and said second protective layer is formed in a layer thickness of from 10 nm to 20 nm.

10 23. The process for producing a metallic rotary polygonal mirror according to claim 15, wherein;

 said protective layer is formed in a triple layer consisting of a first protective layer, a second protective layer and a third protective layer.

15 24. The process for producing a metallic rotary polygonal mirror according to claim 23, wherein;

 said first protective layer is a layer of Al_2O_3 , said second protective layer is a layer of TiO_2 , and

20 said third protective layer is a layer of SiO_2 .

25 25. The process for producing a metallic rotary polygonal mirror according to claim 24, wherein;

 said first protective layer is formed in a layer thickness of from 150 nm to 200 nm, said second protective layer is formed in a layer thickness of from 80 nm to 100 nm, and said third protective layer is

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formed in a layer thickness of from 10 nm to 20 nm.

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5 26. The process for producing a metallic rotary polygonal mirror according to claim 15, wherein;

said metallic rotary polygonal mirror has a surface reflectance of 95% or higher.